

NOTES FROM THE BOTANIC GARDENS, SYDNEY.

No. 9.

BY J. H. MAIDEN AND E. BETCHE.

RANUNCULACEÆ.

RANUNCULUS RIVULARIS, Banks & Sol., var. INCONSPICUUS, Benth.

Brown Mountain, near Lyttleton (E. Betché; January, 1893).

The specimens agree exactly with Hooker's figure of *R. inconspicuus* in Fl. Tas. i. t.2B. It forms dense masses in swamps on the top of the Brown Mountain, between Lyttleton and Nimitybelle, N.S.W. Recorded previously only from Tasmania.

RUTACEÆ.

ZIERIA SMITHII, Andr., var. TOMENTOSA, n.var.

Mt. Useful, Vic. (A. H. S. Lucas; January, 1886): Mt. Tomah, N.S.W. (Jesse Gregson; December, 1897).

This variety is distinguished from the large-leaved normal form by the dense stellate tomentum of the underside of the leaves and young branches. From the tomentose *Z. furfuracea*, R.Br., it differs only in the absence of the tubercular glands and in the more close tomentum. Mueller united *Z. furfuracea* with *Smithii* as a variety; our new variety resembles *Z. Smithii* strikingly in every respect, except the indumentum, and we take this as a corroboration that Mueller's view of *Z. furfuracea* is correct.

We have previously published in these Proceedings (1901, p. 79) a herbarium note from F. v. Mueller with the MS. name of *Z. Smithii* var. *Fraseri*. We find now that Mueller's var. *Fraseri* is so closely allied to *Z. cytisoides*, Sm., that, in our opinion, it should be included in that species.

BORONIA LEDIFOLIA, J. Gay.

Cowan Creek, Berowra (E. Cheel and J. L. Boorman; August, 1902).

A pinnate-leaved form with occasionally umbellate flowers. Though most flowers are solitary, some have two additional flowers in the axils of the small bracts on the peduncle, a variation not previously observed in this very variable species. Otherwise it is distinguished from the type by the very prominently ciliate filaments.

RHAMNACEÆ.

CRYPTANDRA AMARA, Sm., var. LONGIFLORA, F.v.M., ined.

Two well-marked varieties can be easily distinguished in our common *C. amara*, though, amongst a great number of specimens from different localities, they will be found running into each other. The small-flowered and more common form in the Port Jackson district has a calyx of about 1 line in length, with lobes rather shorter than the tube. The large-flowered variety has a calyx-tube nearly or fully twice as long, but with the same short calyx-lobes, so that the tube is proportionally much longer. Benthham took notice of these two forms in his 'Flora Australiensis,' but did not distinguish them by names. Baron von Mueller named the large-flowered form in the Melbourne Herbarium var. *longiflora*, and we propose his name for general adoption.

LEGUMINOSÆ.

SWAINSONA GREYANA, Lindl., var. BRACTEATA, n. var.

Between Gilgandra and Gummin (W. Forsyth; October, 1901).

This peculiar form of the Darling Pea is readily distinguished by the large, ovate, persistent bracts which completely conceal the young buds and nearly conceal the calyx in the opened flowers. The characteristic white tomentum of the calyx is much less dense than in the type, and the calyx-teeth are longer and more acuminate. Flowers and foliage precisely the same. Ripe fruits and seeds not seen.

GASTROLOBIMUM BOORMANI, Maiden & Betche.

Milton (R. H. Cambage; December, 1902).

Previously recorded in these Proceedings from Tuggerah. The new locality brings its range more than 100 miles further south.

ACACIA PUMILA, Maiden & Baker.

Morriset (J. L. Boorman; October, 1899), Richmond (J. L. Boorman; May, 1903).

Since the publication of this species in 1895 (these Proceedings, xx., 385), many additional localities have been discovered, partly in the coast district from Port Hacking to Gosford, partly in the Blue Mountains as high up as Mt. Tomah; and the additional material necessitates some modification of the description. The phyllodia are described as 6 lines long and 1 line broad; it should read instead, phyllodia from $\frac{1}{2}$ to nearly $1\frac{1}{2}$ inches long, 1 line broad in the short-leaved forms, considerably narrower in the long-leaved specimens.

The two above-named localities are habitats of the long-leaved form.

ACACIA TRINEURA, F.v.M.

Temora (R. H. Cambage; October, 1900), Wyalong (J. L. Boorman; October, 1903). New for New South Wales.

UMBELLIFERÆ.

HYDROCOTYLE UMBELLATA, Linn., var. BONARIENSIS, Spreng.

Manly (first bay north of Manly, growing on the beach with *Carex pumila* and *Spinifex hirsutus*; A. A. Hamilton; November, 1902).

This interesting *Hydrocotyle* is common in North America, and seems to be of recent accidental introduction, though it is very difficult to account for it. It has peltate leaves, like the large-leaved forms of *H. vulgare*; but the umbels are on long stalks, and it is distinguished from all other species of this large genus by the irregular compound umbels.

We have to thank Dr. H. Harms, of Berlin, for the determination of this plant.

GOODENIACEÆ.

VELLEYA MONTANA, Hook. f.

Medlow, Blue Mountains (A. A. Hamilton; January, 1903).

A new locality for a plant rare in New South Wales. It is another instance of the occurrence of Tasmanian plants in bleak exposed situations of the Blue Mountains.

GOODENIA DIMORPHA, n.sp.

Springwood, Blue Mts. (E. Betche; February, 1884), Woodford, Blue Mts. (J. H. Maiden; January, 1899), Blackheath, Blue Mts. (A. A. Hamilton; January and April, 1900).

GOODENIA DIMORPHA, Maiden & Betche, var. ANGUSTIFOLIA.

National Park, near Sydney (J. H. Camfield, February, 1896; J. L. Boorman, January, 1903).

We have been puzzled for many years past by a *Goodenia* with a paniculate inflorescence, common in sandy turfy places from Port Hacking to the Blue Mountains. The species is so common that it can scarcely have been overlooked by old collectors, and still less by collectors of the present day; but its forms have probably been mixed up in various herbaria with several other species. The general appearance of the broad-leaved mountain form is that of *G. bellidifolia* with an unusually paniculate inflorescence; but *G. bellidifolia* has a short ovarium and fruit, and our new species has a long and narrow fruit. The narrow-leaved form may have been confounded partly with *G. stelligera*, or, in absence of fruit, with *G. paniculata* or *G. gracilis*, but differs from all in ovarium, fruit and inflorescence.

During recent years we made it our business to obtain fruiting specimens from all forms, with the result that we came to the conclusion that it belongs to Bentham's Section "Eugoodenia" series "Racemosæ," but that it cannot be united with either *G. bellidifolia* or *G. stelligera*. It is most nearly allied to *G. stelli-*

gera, with which it has the narrow capsule in common, and which shows also occasionally a tendency to a branched inflorescence, but from which it is always distinguished by the numerous slender panicle-branches, like *G. paniculata* and *gracilis*, and by the long stem-leaves.

We give the description of both forms separately:—

G. DIMORPHA (normal form)—Blue Mountains.

A perennial with a tufted stock and erect stems from 1 to rarely above 2 feet high, glabrous or nearly so, except the flowers. Leaves radical and rosulate, from oblong- to ovate-spathulate, from under 1 to 2 inches long, entire or obscurely dentate; stem-leaves few and small, becoming shorter and narrower towards the top, mostly supporting the branches. Stems few and slender, with slender distant simple branches, long at the base of the stem, shorter towards the top, each with a single terminal flower, or with a cluster of mostly three flowers on stalks of unequal length, or the panicle-branches are again divided. Flowers often (not always) with a pair of short and slender bracteoles at the base of the calyx (reduced stem-leaves). Calyx-lobes linear, about 1 line long. Corolla yellow, sparingly hairy outside, otherwise as in *G. stelligera* or rather smaller. Capsule linear-oblong, about 5 lines long, the dissepiment reaching nearly to the top. Seeds flat, with a small border, arranged in two rows in each cell.

GOODENIA DIMORPHA, var. *ANGUSTIFOLIA*—National Park.

A perennial with a tufted stock and erect stems about 1 to 1½ feet high. Leaves radical or scattered along the stems and branches, sometimes nearly all in a rosette and sometimes, chiefly on the stem, scarcely reduced in size. The two forms seem to depend entirely on the locality. Isolated growing specimens have mostly rosulate leaves and fewer stem-leaves, but if they grow together in dense masses, the radical leaves are few and the stem-leaves numerous. Leaves linear, about 1 to 1½ inches long, entire, or the radical ones more or less deeply toothed and linear-lanceolate.

Flowers and fruits as in the broad-leaved mountain form, but the slender stems are more numerous, and generally much more branched. The mountain form has occasionally woolly-hairy proliferous nodules in the axils of the lower branches; the same peculiarity is much more frequently to be found in var. *angustifolia*; in some specimens the nodules are in clusters close to the root, so that the numerous stems seem to rise from a densely woolly-hairy stock.

EPACRIDÆ.

EPACRIS IMPRESSA, Labill.

Pigeon House Mountain, Milton (R. H. Cambage; January, 1903).

CONVOLVULACEÆ.

CRESSA CRETICA, Linn.

Wanganella, Hay District (Miss E. Officer; May, 1903).

A common plant in maritime and saline districts of the Old and New World. In Australia it is recorded from all States except Tasmania, and is common in South Australia, but in New South Wales it is restricted to the south-western corner.

Miss Officer writes:—"It covers large areas of open plain country in this district, especially land where water lies for a short time after rain. When in flower the whole air is scented by it."

MYOPORINEÆ.

MYOPORUM DESERTI, A. Cunn.

Scone, Hunter River (J. H. Maiden; May, 1902); Jenolan Caves (W. F. Blakely; June, 1899).

The two localities given are the most eastern localities of a species common on the western plains. The specimens from both localities are distinguished from the western specimens by the thin texture of the leaves, and consequently very prominent oil-glands.

CHENOPODIACEÆ.

BASSIA DIVARICATA, F.v.M.

Denman, Hunter River (J. H. Maiden and J. L. Boorman; May, 1902).

Kochia villosa, Lindl.

Denman (J. H. Maiden and J. L. Boorman; May, 1902).

Kochia microphylla, F.v.M.

Murrurundi (J. H. Maiden and J. L. Boorman; May, 1902).

Kochia microphylla was originally described by Moquin-Tandon as *Enchylæna microphylla*, and retained under that genus till Mueller removed it to *Kochia*. The Murrurundi specimens show beautifully the peculiarities of the species.

Most of the small fruits are quite wingless, which caused Moquin to describe it as *Enchylæna*; while now and then, on the same plant, a few fruits have the characteristic horizontal wing of the genus *Kochia* plainly developed.

AMARANTACEÆ.

Ptilotus exaltatus, Nees.

Denman (J. H. Maiden and J. L. Boorman; May, 1902).

NYCTAGINEÆ.

Boerhaavia diffusa, Linn.

Denman (J. H. Maiden and J. L. Boorman; May, 1902).

These five last enumerated plants (Chenopodiaceæ, Amarantaceæ, and Nyctagineæ) are common on the western plains, but entirely wanting in the coast district.

We have already, in a former paper in these Proceedings, drawn attention to the great number of western plants which make their way down the Hunter River valley, probably in times of floods, as far east as Denman and Scone; and the above are additions to the number already recorded.

PROTEACEÆ.

Banksia paludosa, R.Br.

Near Eden (J. H. Maiden; October, 1901).

MONIMIACEÆ.

DAPHNANDRA TENUIPES, Perk., in Engler, Pflanzenreich, iv. 101, p. 75 (1901).

Tweed River District (E. Betché; March, 1894).

This new species is chiefly distinguished from *D. micrantha* by the broader leaves, more rounded at the base and hairy underneath, and by the looser and larger inflorescence.

The two species differ in fact in a number of, what might be termed by some, small particulars. In the aggregate there is no doubt the species are distinct.

In Miss Janet Perkins and Ernst Gilg's 'Monograph of Monimiaceæ' some very important changes have been made concerning New South Wales plants, which we bring here under general notice.

WILKIEA MACROPHYLLA, A. DC., Prodr. xvi. 2, p. 669 (1868).

Syn. *Kibara macrophylla*, Benth., Fl. Austr. v. 288: *Mollinedia Huegeliana*, Benth., *op. cit.* v. 286; *M. macrophylla*, Tul., Mueller, Second Census.

Miss Perkins writes (Engler's Bot. Jahrbücher, xxv. 569):—"I cannot understand how Bentham could have placed this species under two different genera. I have seen the originals of *Hedycarya macrophylla*, A. Cunn. (synonymous with *Kibara macrophylla*, Benth.), and of *Mollinedia Huegeliana*, Tul., and have convinced myself that they belong with certainty to one and the same plant."

The mistake which both Bentham and Mueller made with regard to this plant seems to us to have been caused by the difficulty often experienced in matching male and female specimens in plants with unisexual flowers. However, in Bentham's description in the 'Flora Australiensis' the difference between the two plants is well defined by the number and disposition of the stamens. Bentham himself writes:—"The female and fruiting specimens (of *Mollinedia Huegeliana*) are, when glabrous, very difficult to distinguish from those of *Kibara macrophylla*."

WILKIEA WARDELLII, Perk., Engler's Bot. Jahrbücher, xxv. 570 (1898). Syn. *Mollinedia Wardellii*, F.v.M., B. Fl. Austr. v. 287.

TETRASYNANDRA PUBESCENS, Perk., Engler's Bot. Jahrbücher, xxv. 569 (1898). Syn. *Kibara pubescens*, Benth., Fl. Austr. v. 290; *Mollinedia pubescens*, F.v.M., Second Census.

TETRASYNANDRA LONGIPES, Perk., Engler's Bot. Jahrbücher, xxv. 569 (1898). Syn. *Kibara longipes*, Benth., Fl. Austr. v. 289; *Mollinedia longipes*, F.v.M., Second Census.

The genus *Mollinedia*, Ruiz et Pav., is, according to Perkins and Gilg, confined to tropical America. The species placed by Bentham under this genus are transferred partly to *Wilkiea*, F.v.M., and partly to *Levieria*, Becc. *Kibara*, Endl., is confined to the Malayan Archipelago, the Australian species being separated from it under the new generic name *Tetrasynandra*.

The two New South Wales genera of this group of Monimiaceae are easily distinguished by the male flowers. *Tetrasynandra* has 4 stamens opposite the perianth-lobes, while *Wilkiea* has 8 to 14 stamens irregularly distributed in the receptacle. Both genera are described as monœcious by the authors of the 'Monograph,' a statement which we hesitate to accept as final till verified by collectors in the field.

JUNCACEÆ.

JUNCUS FILICAULIS, Fr. Buchenau, n.sp.

Road from Nimitybelle to Cooma (J. H. Maiden, December, 1896).

A densely tufted, pale-coloured, small perennial with a horizontal rhizome, and very short internodes. Stems erect, slender ($\frac{1}{2}$ to $\frac{9}{16}$ mm. in diam.), terete, grooved, 8 to 15 cm. high to the inflorescence, or 10 to 20 cm. with the erect leafy bract, the pith interrupted, star-shaped. Sheathing bracts at the base of the stem narrow, opaque, pale, striate on the back, mucronate at the apex, the highest 3 to 5 cm. long. Inflorescence apparently lateral, compound, densely crowded, nearly globular; the lowest

bract erect, leafy stem-like and continuing the stem, straight or curved, 3 to 5, rarely 6 cm. long, the upper bracts shorter than the flowers, glumaceous, pale-coloured. Flowers $2\frac{1}{2}$ to 3 mm. long, pale. Perianth-segments of equal length, or the inner ones distinctly shorter, lanceolate, with broad membranous margins, greenish-yellow on the back, the outer ones acute, the inner ones rather obtuse (but often acute by the involute margins). Stamens 3, scarcely half as long as the perianth-lobes; filaments white, linear; anthers yellow, longer than the filaments. Capsule obovate, obtusely trigonous, obtuse, shorter than the perianth, shining, yellowish, 3-septate. Seeds small, ferruginous, on the base and apex, longer or shorter apiculate, regularly striped between the slightly prominent ribs.

A well-marked species, easily distinguished from all other species of the *Junci genuini* by the thread-like stems and by the contracted inflorescence. It is most nearly allied to *J. vaginatus*, and may at first sight be taken for a very depauperate form of it; but the small fruits, shorter than the perianth, separate it from that species.

The technical terms used by Prof. Buchenau, of Bremen, differ so much from the terminology employed by Bentham, that we have thought it desirable to give a somewhat abbreviated translation of his description, more in conformity with the descriptions used in the 'Flora Australiensis'; but in fairness to the author of the species, we here add the original description kindly sent by him in MS. and not previously published:—

JUNCUS FILICAULIS, Fr. Buch., n.sp.

Juncus e subgeneri *J. genuinorum*.

Perennis, dense caespitosus, pallidus. Radices filiformes, diam. usque 0·8 mm., pallide fuscae. Rhizoma horizontale, internodiis brevissimis. Caules erecti, tenues, diam. 0·5, usque 0·9 mm., teretes, valleculati, usque ad inflorescentiam 8 usque 15, cum bracteâ infimâ 10 usque 20 cm. alti, medullâ interruptâ asterisciformi repleti. Folia basilaria cataphyllina, angusta, opaca, pallida, dorso striata, apice mucronata, supremum 3 usque 5 cm. longum.

Inflorescentia pseudolateralis, composita, dense aggregata, fere sphaerica. Bractea infima cauliformis recta vel curvata, 3 usque 5 (raro 6) cm. longa, bracteae sequentes et prophylla hypsophyllina, pallida floribus breviora. Flores 2·5 usque 3 mm. longi, pallidi. Sepala aequilonga vel interna distincta breviora, lanceolata, late membranaceo-marginata, dorso viridiusculo-straminea, externa acuta, interna obtusiuscula (sed ob margines involutos saepe acuta). Stamina 3, dimidia sepala vix aequantia; filamenta alba linearia; antherae flavidae, filamentis longiores. Pistillum perigonis brevius; ovarium trigono-ovatum; stilus brevissimus; stigmata longa. Fructus perigonis brevior, obovatus, obtusus, obtuso-trigonus, lateribus non impressis, triseptatus; pericarpium subcoriaceum, nitidum, stramineum. Semina parva, circa 0·4 mm. longa, ferruginea, irregulariter et saepe oblique obovata, basi et apice longius breviusve apiculata, inter costas paulla prominentes regulariter transversim linea lata.

Cooma District, N.S.W. (J. H. Maiden; December, 1896).

Prof. Buchenau's views in regard to the nomenclature of the Australian Juncaceæ differ in many respects from those of Bentham and Mueller, and, as the opinion of such a well known authority on Juncaceæ will be of interest to Australian botanists, we give here a short extract from his 'Monographia Juncacearum' (1890), supplemented by his 'Studien über die Australischen Formen der Untergattung Junci genuini,' published five years later in Engler's *Botanische Jahrbücher*, Band xxi. Heft 3, p. 258.

AUSTRALIAN SPECIES OF JUNCUS ACCORDING TO FR. BUCHENAU'S
'MONOGRAPHIA JUNCACEARUM.'

Subgenus i.—*Junci poiophylli*, Fr. Buch.

1. *J. bufonius*, Linn.; B.Fl. vii. 127. All the colonies except West Australia.

2. *J. Brownii*, F.v.M.; B.Fl. vii. 128 as *J. revolutus*, R.Br.

The specific name *revolutus* has been rejected as being based on an error; the leaves are quite flat, though in a dried state they

appear furrowed underneath on account of the shrinking of the tissue between the three strongest ribs. New South Wales, Victoria, Tasmania.

3. *J. homalocaulis*, F.v.M.; B.Fl. vii. 128. New South Wales, Victoria, South Australia, West Australia.

4. *J. tenuis*, Willd. Not recorded by Bentham and Mueller from Australia.

A slender perennial allied to *J. Brownii*, F.v.M., from which it is most conveniently distinguished by the two long leafy bracts at the base of the inflorescence which generally much exceed the inflorescence, while *J. Brownii* has a single leafy bract at the base of the inflorescence scarcely exceeding it. *J. tenuis* is so common in the Port Jackson district that it must have been collected frequently, but probably has been mixed up with *J. Brownii*, a mistake all the more likely as Bentham himself seems to have mixed up the two species in his description of *J. revolutus*. (He writes, B.Fl. vii. 128, "Flowers . . . with one or two leafy bracts at the base of the cyme").

It seems to be not truly indigenous to Australia, but this is a very difficult question to decide, especially as so many *Junci* are almost cosmopolitan; however, we can only say that all our specimens are from cultivated ground, and that we have not seen a specimen from beyond the Port Jackson district.

Subgenus ii.—*Junci genuini*, Fr. Buch.

The chief character of this Section of *Junci* is the inflorescence, which is terminal, but has quite a lateral appearance on account of the lowest bract being erect, continuous with the stem and completely simulating the stem. Bentham includes four Australian species in this group—*J. communis*, E. Mey., *J. vaginatus*, R.Br., *J. pauciflorus*, R.Br., *J. pallidus*, R.Br. Fr. Buchenau divides the Australian *Junci* of this group into five species, to which he now adds *J. filicaulis* as the sixth.

5. *J. filicaulis*, Fr. Buch. New South Wales.

6. *J. polyanthemus*, Fr. Buch., Engl. Bot. Jahrb. xxi. 3, p. 261 (1895).

A moderately tall green perennial chiefly characterised by its small trigonous-globular fruits (smaller than in all the following species of this group), scarcely exceeding the perianth, and by the much-compound regular dichotomously branched dense but not contracted inflorescence with numerous flowers. Flowers scarcely 2 mm. long. Perianth segments of equal length. Stamens 3.—All the Australian States.

This species much resembles in its typical form the European *J. effusus*, Linn., but is distinguished from it chiefly by the fruit and by the interrupted pith and the rather smaller flowers. In Bentham's Fl. Austr., it seems to be included in *J. communis*, E. Mey.

7. *J. radula*, Fr. Buch. Mon. Junc. p. 241 (1890).

A moderately tall pale perennial distinguished by the anthelate inflorescence (an inflorescence where the lateral axis exceeds the main axis) ending in sickle-shaped ultimate branchlets with round flowers distant at equal intervals. Stamens 3 to 6. Fruit trigonous-barrel-shaped, as long as the perianth.—New South Wales, Victoria, West Australia.

8. *J. vaginatus*, R.Br. Prod. 258 (1810); B.Fl. vii. 129.

Chiefly distinguished from the allied species by the flowers being collected in small clusters in the irregular branched inflorescence. Stamens 3 to 6. Fruit barrel-shaped, longer than the perianth.—New South Wales, Queensland.

9. *J. pauciflorus*, R.Br. Prod. 259 (1810); B.Fl. vii. 129.

A rather small plant with an anthelate inflorescence like *J. radula*, but the fruits are trigonous-ovate, about 3 mm. long, conspicuously longer than the perianth. Stamens 3 to 6. Flowers not always few as is implied in the name.—New South Wales, Queensland, Victoria, S. Australia, Tasmania.

10. *J. pallidus*, R.Br. Prod. 258 (1810); B.Fl. vii. 130.

A tall pale plant with an anthelate inflorescence. Fruit trigonous-ovate, and exceeding the perianth, but larger than in *J.*

pauciflorus, about 4 mm. long. Stamens 6.—New South Wales, Queensland, Victoria, Tasmania, South Australia, West Australia.

Subgenus iii.—*Junci thalassici*, Fr. Buch.

11. *J. maritimus*, Lam., var. *australiensis*, Fr. Buch.; B.Fl. vii. 130.—New South Wales, Queensland, Victoria, Tasmania, South Australia, West Australia.

Subgenus iv.—*Junci septati*, Fr. Buch.

This group contains all the Australian species the leaves of which are more or less distinctly jointed from internal cross partitions of the pith.

12. *J. pusillus*, Fr. Buch., Abh. Nat. Ver. Brem. vi. p. 395 (1879); *J. capillaceus*, Hook. f., Fl. Nov. Zel. i. 264 (1853), B.Fl. vii. 132.—New South Wales, Victoria, Tasmania.

Hooker's name *capillaceus* has to give way to Buchenau's name *pusillus*, because the former name has been previously bestowed by Lamarck on a South American species of *Juncus*. Mueller united it in his Census with the Chilian species *J. stipulatus*, Meyen and Nees, a union which is not followed in the latest Kew publication, nor by Prof. Buchenau.

Bentham's description of *J. prismatocarpus* includes *J. holoschaenus*, an unnatural union, as Mr. E. Cheel has pointed out (these Proceedings, 1902, p. 210), a view fully approved of by Prof. Buchenau.

Buchenau describes four species in this group (besides *J. pusillus*), viz., *J. prismatocarpus*, *holoschaenus*, *Fockii* and *lampocarpus*, which are all common in the Port Jackson district, and are doubtless mixed up in most Australian herbaria with *J. prismatocarpus*. To clear up the confusion, we give here a short description of the four species, extracted from Buchenau's 'Monograph,' and a short key of the most conspicuous though not always most important characters:—

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|--|--------------------------------|
| 1. Stamens 3. Leaves indistinctly septate, pluri-tubulose..... | 13. <i>J. prismatocarpus</i> . |
| 1*. Stamens 6. Leaves distinctly septate, uni-tubulose. | |

2. Flowers large.
3. Flowers with acute angles, crowded. Fruit scarcely longer than the perianth..... 14. *J. holoschœnus*.
- 3*. Flowers with obtuse angles, squarrose. Fruit conspicuously longer than the perianth..... 15. *J. Fockii*.
- 2*. Flowers, flower-clusters, and fruits conspicuously shorter... 16. *J. lampocarpus*.

13. *J. prismatocarpus*, R.Br., Prod. 259 (1810); B.Fl. vii. 131.

A very variable perennial. Stems erect, 20 to 50 cm. high, from nearly terete to two-edged compressed. Leaf-sheath rounded or acute at the back, the lamina mostly much compressed, indistinctly septate and pluri-tubulose, *i.e.*, the leaf has longitudinal partitions besides the indistinct cross-partitions (rarely uni-tubulose and perfectly septate). Inflorescence compound to decomposed, the globular clusters few- to many-flowered (6 to rarely 12). Flowers 3 to 5 mm. long, mostly crowded, nearly always green. Perianth segments linear-lanceolate, subulate, mostly of equal length. Stamens 3, about half as long as the perianth segments; anthers oblong. Fruit as long as the perianth or more or less longer, triquetrous, conical or prismatic, shining, mostly from rust-coloured to straw-coloured.—All over Australia, New Zealand, Southern and Eastern Asia.

14. *J. holoschœnus*, R.Br., Prod. 295 (1810).

A perennial with rigid erect stems 20 to 40 cm. high, terete or somewhat compressed. Lamina of the leaves perfectly septate and uni-tubulose, *i.e.*, without longitudinal partitions, rigid, compressed, $1\frac{1}{2}$ to $2\frac{1}{2}$ mm. diam. Inflorescence rigid, mostly umbel-like, rarely anthelate, with 4 to 8 flower-clusters, each of about 15 to 20 crowded flowers. Flowers $3\frac{3}{4}$ to $4\frac{1}{4}$ mm. long, sharp angled. Perianth segments of equal length, lanceolate, pointed, the inner ones with membranous margins, green or greenish-straw-coloured with a brown point. Stamens 6. Fruit as long as the perianth or somewhat longer, prismatic or somewhat ovate-prismatic, shortly or very shortly mucronate, shining, rust- or straw-coloured.—Australia and New Zealand.

15. *J. Fockii*, Fr. Buch., Mon. Junc. p. 358 (1890).

A perennial with stiff erect compressed stems 20 to 40 cm. high. Leaf-sheath somewhat acute on the back, the lamina laterally compressed, perfectly septate and uni-tubulose. Inflorescence stiff, decomposed, anthelate, the flower-clusters with about 8 to 10 squarrose flowers. Flowers 4 to $4\frac{1}{2}$ mm. long or with mature fruits attaining to 6 mm., blunt-angled. Perianth segments of equal length, or the inner ones longer, green or the apex reddish. Stamens 6. Fruit conspicuously longer than the perianth, narrow prismatic-pyramidate, gradually narrowed from near the base, shining, rust- or straw-coloured.—Australia.

16. *J. lampocarpus*, Fr. Buch.

A somewhat caespitose perennial. Stems 5 to 25, rarely 45 cm. high, either erect and terete or ascending and compressed. Lamina of the leaf terete or compressed, often curved, perfectly septate and one-tubed. Inflorescence mostly with numerous flower-clusters, anthelate, the branches oblique-erect, the ultimate ones often squarrose. Flowers few or rarely numerous in the cluster, $2\frac{1}{2}$ to 3 mm. long. Perianth segments of equal length, mostly all acute, the inner ones rarely obtuse. Stamens 6. Fruit longer than the perianth, ovate, prismatic-pyramidate, shortly mucronate, shining, black or brown, rarely rust-coloured or greenish.

Common in Europe and Asia, less common in North America, Northern Asia and New Zealand. No Australian localities have been hitherto recorded for this species, but it is common in swampy places in the Port Jackson district; and we have also a specimen from South Australia. We have to thank Prof. Buchenau for the determination of our specimens.

Subgenus v.—*Junci graminifolii*, Fr. Buch.

17. *J. falcatus*, E. Mey.; B.Fl. vii. 126.—New South Wales, Victoria, Tasmania.

18. *J. planifolius*, R.Br.; B.Fl. vii. 125. All the Colonies except West Australia.

19. *J. gracilis*, R.Br.; B.Fl. vii. 125.—West Australia.

20. *J. caespiticus*, E. Mey.; B.Fl. vii. 126 as *J. caespitius*, E. Mey.—New South Wales, Victoria, Tasmania, South Australia, West Australia.

21. *J. capensis*, Thunb., var. *Ecklonii*, Fr. Buch.

A perennial with fibrous roots and erect slender stems, about 30-35 c.m. high. Leaves linear, narrow, involute. Inflorescence terminal, compound, anthelate or umbel-like, the lowest bract leafy, as long as the inflorescence, the others shorter. Flower-clusters 10 to 15, with 6 to 10 flowers about 4 mm. long; perianth segments mostly aristate-acuminate.

A South African plant collected by Mr. E. Cheel in the Centennial Park, Sydney, December, 1900. Determined by Prof. Buchenau.

TYPHACEÆ.

In P. Graebner's recent Monograph of the Typhaceæ (Engler, "Das Pflanzenreich," iv. Typhaceæ, 1900) the following two forms are recorded for New South Wales.

TYPHA ANGUSTIFOLIA, Linn., Spec. Pl. ed.1, p.971 (1753).

Var. *Brownii*, Kronfeld, Verh. Zool. Bot. Ges. Wien, xxxix. p.152 (1889). Syn. *J. latifolia*, Forst. f., Fl. Ins. Prod. 64 (1786); *J. angustifolia*, R.Br., Prod. 338 (1810).

Lower leaves with a semi-cylindrical sheath, rarely flat. Upper male portion of the spike often contiguous with the lower female portion. Hairs in the axils of the male flowers dilated towards the apex, not denticulate. Bracteoles gradually dilated towards the apex.—Port Jackson district.

Var. *Muelleri*, Rohrb., Verh. Bot. Ver. Brandenb. xi. p.95 (1869). Syn. *J. angustifolia*, Hook. f., Fl. Tasm. ii. 38. (1860).

Leaves biconvex at the base. Upper male portion of the spike separated from the lower female portion by a bare interval, or rarely contiguous. Hairs in the axils of the male flowers simple or branched. Filiform bracteoles abruptly dilated at the apex.

Scattered in New South Wales. No special locality given, but as it is recorded from Central Australia, the western specimens belong probably to this form.

SCHEUCHZERIACEÆ.

The genus *Triglochin* is placed by Bentham and Hooker in the very heterogeneous order Naiadaceæ, which contains plants of such different structure that they have hardly anything in common but their aquatic habit. In accordance with the nomenclature followed in Engler's 'Nat. Pflanzenfamilien,' the artificial order Naiadaceæ has been split into several smaller natural orders, viz.:—Potamogetonaceæ, Najadaceæ and Juncaginaceæ, the genus *Triglochin* belonging to the last-named order. In Fr. Buchenau's latest Monograph in Engler's 'Pflanzenreich' (1903), the name of the order Juncaginaceæ has been changed into Scheuchzeriaceæ, and so many changes have been made in restoring old names to specific rank (merged by Bentham and Mueller into other species), that it will be of interest to Australian botanists if we give here a short extract of Prof. Buchenau's views on the Australian Scheuchzeriaceæ.

KEY TO THE AUSTRALIAN GENERA OF SCHEUCHZERIACEÆ.

1. Ovule erect. 1. *Triglochin*, Linn.
 1*. Ovule pendulous..... 2. *Mauudia*, F.v.M.

KEY TO THE AUSTRALIAN SPECIES OF TRIGLOCHIN.

- i. Subgenus *Eutriglochin*; carpels connate, separating at maturity from the central axis, the apices sometimes free. Fertile carpels 3 in the Australian species.
1. Perennial plants with persistent stolons. Carpels semicircular, obtuse at the base. 1. *T. striata*, Ruiz, et Pav., Fl. Peruv. et Chil. iii. (1802) 72; B.Fl. Austr. vii. 166.—All the Colonies except West Australia.
- 1*. Small annual plants.
2. Carpels free at the apex, the fertile ones with a reflexed point at the apex. 2. *T. mucronata*, R.Br., Prod. (1810) 343; B.Fl. Austr. vii. 168.—W.A., S.A., Vic.
- 2*. Carpels straight, connate to the apex.
3. Fruits elliptical, very small (hardly 2 mm. long), carpels rounded at the base and at one back. 3. *T. Muellerei*, Buch., Pflanzenreich iv. 14 (1903), p. 12.—W.A.
- 3*. Fruits linear, carpels more or less spurred at the base.

4. Fruits pyramidal-linear, somewhat spreading, pedunculate or sessile; carpels rounded at the back, the spurs long and often curved.—4. *T. calcitrapa*, Hook., Ic. Pl. viii. (1845) t. 731 (*T. centrocarpa*, Hook. var. *calcitrapa*, Benth., Fl. Austr. vii. 167).—W.A., S.A., N.S.W., Q.
 - 4*. Fruits prismatic-linear.
 5. Fruits pedunculate, spreading; carpels laterally carinate, the spurs very short.—5. *T. nana*, F.v.M. in Trans. Vict. Inst. i. (1854) 135 (*T. centrocarpa*, Hook., var. Benth., Fl. Austr. vii. 167).—Vic., Tas., S.A.?
 - 5*. Fruits sessile.
 6. Fruits rather long ($3\frac{1}{2}$ to 5 mm. long), appressed; carpels laterally carinate, the spur short.—6. *T. centrocarpa*, Hook., Ic. Pl. viii. (1845) t. 728; B.Fl. Austr. vii. 167.—*T. centrocarpa*, Hook., a rare plant, according to Fr. Buchenau, growing in W. Australia in crevices of rocks between moss. The additional localities: S. Australia, Tasmania, Victoria, N.S. Wales, Queensland, given by Mueller in his Census, refer apparently to *T. nana* and *T. minutissima*, both included by Mueller and Bentham in this species.
 - 6*. Fruits very small (1 to $1\frac{1}{2}$ mm. long), somewhat spreading; carpels hardly carinate, the spur very short.—7. *T. minutissima*, F.v.M., Fragm. vi. (1867) 82 (*T. centrocarpa*, Hook. var. Benth., Fl. Austr. vii. 167).—Southern parts of Australia.
- ii. Subgenus *Cyanogeton*. Carpels all free. Very variable, perennial, mostly floating.—8. *T. procera*, R.Br., Prod. (1810) 343; B.Fl. Austr. vii. 168.—Common all over Australia.

MAUNDIA, F.v.M.

M. triglochoides, F.v.M., Fragm. i. (1858) 23 (*Triglochin Maundii*, F.v.M., Fragm. vi. 83; B.Fl. Austr. vii. 169).—New South Wales, Queensland.

CYPERACEÆ.

SCHÆNUS SCULPTUS, Boeck.

Near Germanton (W. Forsyth; November, 1900), near Grenfell (Collector unknown; February, 1901). New for New South Wales.

The type of this species was collected by Drummond in Western Australia; Mueller gives, in his Second Census, South Australia

as an additional locality; Mr. H. B. Williamson collected it in 1901 at Hawksdale, Victoria, and we are now able to add it to the flora of New South Wales.

GRAMINEÆ.

PANICUM GILESII, Benth.

Coonamble (L. J. Ffrench; February, 1903).

This Central Australian grass was first recorded for New South Wales in these Proceedings for 1901 (p. 89) from specimens sent from Tibooburra, in the extreme north-west corner of this State. Now it is recorded from Coonamble on the Castlereagh River about 100 miles north of Dubbo, where it is said by Mr. Ffrench to thickly cover about $\frac{1}{4}$ of an acre in a paddock of the Geanmoney Station, though it is supposed to have been previously quite unknown in the district.

FILICES.

PTERIS FALCATA, R.Br., var. NANA, Bailey.

Grose Vale, near Mt. Victoria (E. Cheel; December, 1900); Crawford River, Bullahdelah (E. Cheel; October, 1902).

Two new localities for Bailey's var. *nana* of *Pteris falcata*, which has been previously recorded by us from the Apsley Falls, New England.